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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/319,688	06/09/1999	MASAKAZU HISHINUMA	84776	3448

7590 03/27/2002  
J GEORG SEKA  
TWO EMBARCADERO CENTER  
8TH FLOOR  
SAN FRANCISCO, CA 941113834

EXAMINER

TALBOT, BRIAN K

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/27/2002

13

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/319,688

Applicant(s)

HISHINUMA ET AL.

Examiner

Brian K Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/18/02 has been entered.

2. Claims 1-11 and 30-33 have been canceled. Claims 12-27 remain in the application.

***Claim Rejections - 35 USC § 103***

3. Claims 12-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) further in combination with Matsuzaki (5,474,800).

JP 04-121,964 teaches a fuel electrode for solid electrolyte fuel cells. The fuel cell electrode is a cerment comprising Ni-CeO<sub>2</sub>-YSZ.

JP 04-121,964 fails to teach a transition metal as well as the Ce compound having a metal oxide dissolved therein.

JP 04-169,067 teaches the addition of an alkaline earth metal or rare earth element along with Nickel and Cerium in producing a fuel cell electrode. Hazbun (4,791,079) teaches doping a

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stabilized zirconia with titanium or vanadium produces improvement in ion and electron conductivity in fuel cell electrodes.

Therefore, it would have been obvious at the time the invention was made to have modified JP 04-121,964 electrode cerment with the components as evidenced by JP 04-169,067 and Hazbun (4,791,079) because of the improvement in conductivity displayed by the electrode.

JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) fails to teach forming the fuel electrode with metallo-organic precursors.

Matsuzaki (5,474,800) teaches forming Ni-YSZ electrode fuel cells by mixing metallo-organic precursors of the components, hydrolysis and annealing to form the electrode. The metallo-organic precursors are metal octylates and the nickel is introduced as a powder. The electrode paste is screen printed on the electrolyte.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) cerment by utilizing metallo-organic precursors and oxide powders because of the expectation of achieving similar results.

#### ***Response to Amendment***

4. Applicant's arguments filed 3/18/02 have been fully considered but they are not persuasive.

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Applicant argued that the prior art teaches mixing the YSZ and CeO<sub>2</sub> while the instant invention uses a material such as CE as a dopant and forms a doped YSZ.

The Examiner disagrees. The instant claims teach mixing metalo-organic precursors of yttrium and zirconium and mixing that with powders of CeO, NiO and transition metals such as titanium. The combination of prior art teaches utilizing metalo-organic precursors and mixing a powder of nickel to form Ni-YSZ. Other "materials" are shown to have a positive effect of the YSZ which include CeO and titanium. Hence, the claimed invention is clearly taught in the combination of references. In addition, the Examiner sees no difference in what is claimed and what the art teaches.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-6357 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.



Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT  
March 26, 2002